

Claim Amendments

Claims 1-20 (canceled)

A 21. (original) A hearing aid comprising:
a deformable skin which bounds an internal region and wherein the skin does not exhibit sufficient rigidity to be insertable into a user's ear canal; and
at least one spine which extends axially along an interior surface of the skin and is attached thereto sufficiently so as to provide insertion rigidity when inserted into the user's ear canal.

22. (original) A hearing aid as in claim 21 wherein the skin is formed of an elastomer selected from a class which includes silicone, polyurethane, latex, and polyvinyl- chloride.

23. (original) A hearing aid as in claim 21 which includes an output transducer wherein the skin and spine, but not the output transducer, are distorted on insertion into the ear canal.

24. (original) A hearing aid as in claim 21 wherein the spine comprises a vent tube that is attached to the skin substantially along its length.

25. (original) A hearing aid as in claim 21 which includes a deformable matrix in the region wherein the matrix applies expansive forces to the skin.

26. (original) A hearing aid as in claim 21 wherein the at least one spine is integrally molded with the shell.

27. (original) A hearing aid as in claim 25 wherein the matrix is compressible in response to forces applied by the ear canal whereby a volume parameter of the internal region is dynamically alterable in response to applied ear canal forces.

28. (original) A hearing aid as in claim 26 which includes a plurality of ribs formed on an exterior periphery of the skin.

29. (original) A hearing aid as in claim 21 which includes an audio output transducer in the internal region wherein the transducer is surrounded, at least in part, by a compressible matrix.

30. (original) A hearing aid as in claim 29 wherein the matrix pre-loads the skin with outwardly directed expansive forces.

A 31. (original) A hearing aid as in claim 29 wherein the matrix comprises at least one of an open cell foam, a closed cell foam, and a fabric.

32. (original) A hearing aid as in claim 25 wherein the expansive forces contribute to the skin forming a seal with the user's ear canal, wherein as the shape of the ear canal changes, due to movement of the user's jaw, the seal is broken, permitting air flow into the canal, and reforms as the matrix continues to apply expansive forces to the skin.

33. (original) A hearing aid as in claim 27 wherein the expansive forces contribute to the skin forming a seal with the user's ear canal, wherein as the shape of the ear canal changes, due to movement of the user's jaw, the seal is broken, permitting air flow into the canal, and reforms as the matrix continues to apply expansive forces to the skin.

34. (original) A hearing aid as in claim 27 which includes a faceplate attached to the skin.

Claims 35-103 (Canceled)

104. (new) A hearing aid comprising:
a deformable skin which bounds an internal region and where the skin is compliant and
at least one spine which extends axially along an interior surface of the skin and is attached thereto sufficiently so as to provide insertion rigidity when inserted into the user's ear canal.

105. (new) A hearing aid as in claim 104 wherein the skin is formed of an elastomer selected from a class which includes silicone, polyurethane, latex, and polyvinyl- chloride.

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106. (new) A hearing aid as in claim 104 which includes an output transducer wherein the skin and spine, but not the output transducer, are distorted on insertion into the ear canal.

107. (new) A hearing aid as in claim 104 wherein the spine comprises a vent tube that is attached to the skin substantially along its length.

108. (new) A hearing aid as in claim 104 which includes a deformable matrix in the region wherein the matrix applies expansive forces to the skin.

109. (new) A hearing aid as in claim 104 wherein the at least one spine is integrally molded with the shell.

110. (new) A hearing aid as in claim 108 wherein the matrix is compressible in response to forces applied by the ear canal whereby a volume parameter of the internal region is dynamically alterable in response to applied ear canal forces.

111. (new) A hearing aid as in claim 109 which includes a plurality of ribs formed on an exterior periphery of the skin.

112. (new) A hearing aid as in claim 104 which includes an audio output transducer in the internal region wherein the transducer is surrounded, at least in part, by a compressible matrix.

113. (new) A hearing aid as in claim 112 wherein the matrix pre-loads the skin with outwardly directed expansive forces.

114. (new) A hearing aid as in claim 112 wherein the matrix comprises at least one of an open cell foam, a closed cell foam, and a fabric.

A 115. (new) A hearing aid as in claim 108 wherein the expansive forces contribute to the skin forming a seal with the user's ear canal, wherein as the shape of the ear canal changes, due to movement of the user's jaw, the seal is broken, permitting air flow into the canal, and reforms as the matrix continues to apply expansive forces to the skin.

116. (new) A hearing aid as in claim 110 wherein the expansive forces contribute to the skin forming a seal with the user's ear canal, wherein as the shape of the ear canal changes, due to movement of the user's jaw, the seal is broken, permitting air flow into the canal, and reforms as the matrix continues to apply expansive forces to the skin.

117. (new) A hearing aid as in claim 110 which includes a faceplate attached to the skin.

118. (new) A hearing aid as in claim 104 which includes at least one electrical component, surrounded by an open cell deformable matrix and positioned in the internal region wherein the matrix exerts expansive forces on an internal periphery of the skin causing same to assume an expanded state in the absence of compressive forces whereupon the skin and matrix assume a deformed state while being inserted into the user's ear canal due to compressive forces exerted thereon by the ear canal whereupon ambient air is forced from the internal region reducing same.

119. (new) A hearing aid as in claim 118 wherein the component is not distorted while the housing is being inserted.

120. (new) A hearing aid as in claim 118 whereupon, when inserted in the ear canal, the matrix applies expansive forces to the skin forcing same into contact with the periphery of the ear canal thereby creating a flexible, feedback reducing seal.

121. (new) A hearing aid as in claim 120 which, when inserted, exhibits a smaller internal volume than prior to insertion.

122. (new) A hearing aid as in claim 121 which includes a flow port, coupled to the internal volume, from which internal ambient air can be expelled during insertion.

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123. (new) A hearing aid as in claim 122 wherein the matrix can increase the internal volume and external ambient air can flow thereinto, via the port, in response to changes in the shape of the ear canal.

124. (new) A hearing aid as in claim 118 wherein the matrix is selected from a class which includes an open cell foam, a fabric and a porous solid.

125. (new) A hearing aid as in claim 118 wherein the skin carries a plurality of molded protrusions on an exterior periphery.

126. (new) A hearing aid as in claim 125 wherein spaces between protrusions facilitate drying of the ear canal.